

AMATEUR RADIO

OCTOBER
1950

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

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EDITORIAL



The rapid post-war increase in the number of licenced Amateurs has reduced the elbow room available for operation on restricted bands when conditions are good.

The "Gentlemen's Agreement," providing for voluntary reservation of portion of each band for c.w. operation, was promoted by your Federal Council with a view to giving c.w. operators a channel comparatively free from phone QRM. Naturally the success of any plan of this nature depends upon the whole-hearted co-operation of the individual. Hence the success of the present plan rests with YOU and every other active Operator.

The major QRM problems in each and every band are created by—"Inane Earbashing," "Splatter," and "Poor Operating Techniques."

"Inane Earbashing" we will leave to the conscience of the individuals concerned—perhaps when the housing shortage is overcome the aforesaid earbashers will be able to lean on the dividing fence once more.

"Splatter" can be avoided if every law abiding Amateur makes proper use of the monitor demanded by the conditions of his "Station Licence;" therefore no excuses should be proffered or accepted for such offences.

"Poor Operating Technique" is only excusable if the offender is a newcomer to our ranks; however, observation indicates that the chief

offenders in this direction are experienced operators or the swaggering type, who satisfy their ego by adopting irregular and individual procedures, which are in many cases in somewhat doubtful taste. Unfortunately some of the younger members who join the Amateur ranks are apt to adopt this slap happy style rather than the more sober procedure designed to give everyone the maximum enjoyment of our hobby.

Federal Executive suggests that in order to promote goodwill and good operating, instead of advocating return to the "probationary period on c.w." (which can never be justified on technical grounds) each and every Amateur should:—

- Make a point of getting to know personally each of the new licenced (Radio Amateur type) in his district.
- Help all newcomers along the road to good operating instead of shunning them as if they were interlopers in our ranks merely because of slowness on the key or hesitancy in phone procedure.
- If unable to help your neighbour solve his technical problem, introduce him to someone who can do so.
- Practice the Amateur Code.

Let's make goodwill and good operating a certainty by adopting a co-operative attitude towards all fellow Amateurs, old and new alike.

FEDERAL EXECUTIVE

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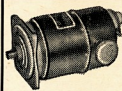
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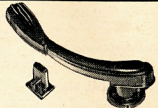
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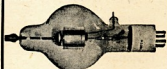
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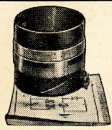
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LOGARITHMIC COMPRESSOR

Aids in Preventing Overmodulation While Increasing Signal Effectiveness

Every phone man, at some time in his QRM-ridden life, has wished that he had a small switch available which would permit him magically to increase his power tenfold. This would be Utopia—from one kilowatt to ten kilowatts by pressing a button.

This button is now available, and it is mounted on the front of the Logarithmic Compressor. This unit will give an effective signal gain which is adjustable from a few db up to as much as ten db (ten to one in power).

The Logarithmic Compressor is an audio frequency device which is inserted between your microphone and your present speech amplifier. Its function is to push up the average modulation level, with the result that high percentage modulation is assured at all times, regardless of the sound level reaching the microphone.

COMPRESSION VERSUS CLIPPING

Those familiar with clippers or clipping circuits can see that the Logarithmic Compressor is intended to do the same sort of job as a clipper. There is, however, an important difference between logarithmic compression as used in the Logarithmic Compressor and clipping.

Fig. 2 compares the characteristics of the two different systems. In either case the input wave suffers distortion, but the distortion caused by the clipping action of the ordinary diode type clipper (Fig. 2B) is worse for a given amount of signal compression than that caused by the logarithmic compression of a copper-oxide instrument rectifier (Fig. 2A).

Distortion present in either circuit will add "harshness" to speech signals and without further treatment would result in excessively broad signals. Therefore, any distorting type circuit should be followed by a suitable filter to prevent the high frequency products produced by this distortion from reaching the modulated stage. With such a filter much of the "harshness" will still be present but the radio frequency signal need not be broad. The harshness results from cross modulation (distortion) products that lie within the pass band of the filter.

The advantage of the logarithmic compression system is that the distortion is less severe (for a given amount of compression) than the clipper type, and this makes possible the use of a vastly simpler filter arrangement. Three "stages" of R-C type filtering used in the Logarithmic Compressor are as effective as more elaborate sharp-cutoff types of L-C filter virtually necessary with the clipper type of circuit.

Further, the transient response of the R-C type filter is such that no overshoot of signal peaks can occur. This is not the case with sharp-cutoff L-C filters. This means that the logarithmic compressor circuit with a properly designed R-C filter is superior to the ordinary

FEATURES—

- Provides 10 db increased effectiveness;
- Uses self-contained speech-range filter;
- Three tubes, including rectifier;
- Small size—space saving.

In keeping with our policy of re-printing worthwhile articles from overseas publications, we present the following article in G.E. "Ham Hints," May-June, 1950.

For those Hams who possess a modulator and speech amplifier, but desire the advantages of speech clipping, this unit will enable them to obtain the advantage of clipping without pulling their present gear about, as it is simply inserted between the microphone and pre-amplifier.

The 12AT7 high-mu twin triodes specified are at present difficult to obtain in Australia, but we understand they will be obtainable soon. The nearest equivalent is the 6SL7, and we would like to know how this circuit works out with these valves so that the information can be passed on to our readers.

clipper circuit followed by a sharp L-C filter. Repeated tests confirm this statement.

CIRCUIT DETAILS

With reference to Fig. 3 it will be seen that the first 12AT7 acts as a two stage audio amplifier to bring the signal from the microphone to a sufficient level so that the compression circuit itself operates at the proper level. Resistor R1 in the first stage has been added as a precaution against r.f. feedback.

Special care has been taken to attenuate low audio frequencies prior to compression. Doing this gives a well balanced speech response as well as minimising much of the distortion caused by cross-modulation between the low speech frequencies and the intelligence-bearing high speech frequencies. The values of condensers C2, C3, and C4 are chosen to attenuate the low frequencies adequately before speech compression. Condensers C7 and C9 serve the same purpose after compression has taken place.

Resistor R4, by varying the signal input to the second section of the first 12AT7, enables control of the amount of compression.

The audio transformer, T1, is necessary because the limiting circuit must be fed by a low-impedance, low-resistance source. Using the centre tap on this transformer, accomplishes this function.

The actual limiting or compression circuit consists only of R7 and W, the latter being two sections of a copper-oxide instrument rectifier. Resistors R8 and R9, together with condensers C5 and C6 act as a two-section R-S filter. The output of this filter feeds the second 12AT7 directly. Resistor R12 acts as an output control so that the output level from the speech compressor may be made to match the output level of the microphone. Thus when the speech compressor is switched out of the circuit no other adjustment need be made.

The output tube is required for two reasons. It is necessary to present the proper load to the two R-C filters and, secondly, to permit a third R-C stage to be utilised. Inasmuch as the second section of the 12AT7 tube is not used this may seem like wasting part of the tube, but the use of a high-mu triode was dictated and the 12AT7 fills this requirement nicely. Note that the heater of the unused section need not be energised. Many uses for this extra tube section will undoubtedly suggest themselves.

The in-out switch, S2, allows the unit to be switched in and out of the circuit easily. Note that shielded wire is specified for the connections to this switch. The output itself is carried by a shielded lead which plugs into the mike jack of any speech amplifier designed to handle a high impedance dynamic or crystal microphone.

The power supply is conventional in all respects. Because of the low current drain on the power supply a resistor-capacitor filter is employed. Resistor R18 and condenser C11 provide decoupling and additional filtering for the first 12AT7 section plate voltage.

The connections indicated by the heavy black lines in the power supply section should all be made to one ground point. This will prevent the chassis from carrying the circulating capacitor current and help to keep the unit hum-free.

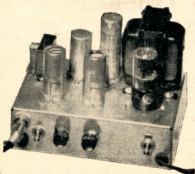


Fig. 1.—The Logarithmic Compressor ready to plug into your present microphone jack. Controls are, left to right, in-out switch, compression control, output control and a.c. on-off switch.

CONSTRUCTIONAL DETAILS

As may be seen from the photograph, the entire unit, including power supply, is mounted on a 5 by 7 by 2 inch chassis. While the layout is not critical, it is advisable to keep the power supply portion of the circuit as far away from the rest of the circuit as possible. The layout shown is quite satisfactory.

With reference to Fig. 1, the front panel layout, from left to right, is: mike jack, output lead, in-out switch, compression control, output level control, AC on-off switch and AC cord. The tubes are, left to right, input 12AT7, output 12AT7 and 6X5 rectifier. Note that the two 12AT7 tubes are shielded. Resistor R1 (underneath chassis) is placed as close to the grid pin as possible.

The wiring can be made simpler if the unused leads from the power transformer are pulled inside the transformer case and securely taped to avoid shorts. This was done with the 2.5 volt and the 5.0 volt windings.

The unit pictured uses a bottom cover plate for the chassis. This is recommended to avoid RF feedback. Any sort of thin metal will serve for this purpose, if your chassis comes without a bottom plate.

COMPONENT PARTS

While no extremely critical values are required, it is recommended that the specified values be used in all cases. For example, C2 and C7 are specified as 1.0 uF. capacitors. If lower values were to be used, the frequency response would suffer, and if higher values were used, the result would be insufficient low-frequency attenuation.

Almost any sort of push-pull plates to voice coil transformer will serve as T1. Wattage rating of this transformer is not important.

If possible, linear taper potentiometers should be used at R4 and R12. This sort of taper will give a smoother action than other types of taper.

Care must be taken in purchasing the limiter rectifier, W, because instrument rectifiers come in several different types. Basically, of course, they are used to make AC meters out of DC meters. However, they can be purchased as half-wave units, doubler units, full-wave units and bridge units.

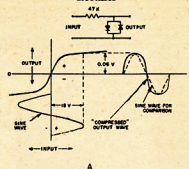
Two separate half-wave units, connected as shown, will work, and the bridge-rectifier style will work if the proper leads are used. The "full-wave" unit will not serve because the two diode sections are connected improperly. In the doubler type rectifier the two diode units are connected as shown in Figs. 2 and 3 and therefore this type of instrument rectifier would be the best to use.

COMPRESSION ADJUSTMENT

The adjustment of the Logarithmic Compressor is done very easily. Plug in a mike and place the in-out switch, S2, in the "out" position so that the microphone is connected directly to your speech amplifier, then follow these three steps:—

● Adjust the audio gain control on the transmitter for normal modulation as seen on an oscilloscope (the best method) or some other instrument worthy of trust.

Transfer Characteristics of Back-to-Back Copper Oxide Instrument Rectifier



Transfer Characteristics of Usual Diode Clipper Circuit

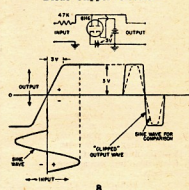


Fig. 2.—A comparison between the output waveform of a Logarithmic Compressor and a diode clipper.

● Put the output control on the unit to zero and set the compression control so that it is about half open. Switch the compressor to "in" and advance the output control while speaking into the microphone until the peak modulation is the same as in step 1. While an oscilloscope is not absolutely necessary in order to make this adjustment, it is strongly recommended.

● Adjust the compression control so that the average plate current in the modulator stage on a sustained "00000"—"0" is, say, not over twice that obtained with the compressor out. Then try compressor "in" and "out" on a few QSOs to find the best operating point of the compression control for the microphone you are using and the receiving conditions prevalent at the other fellow's QTH.

USE OF THE COMPRESSOR

With the Logarithmic Compressor in use the modulator tubes are required to handle much more average power than usual. In fact, it is possible that your modulator stage will not be capable of handling the extra average power required. Careful checking with an oscilloscope will determine if this is the case.

As a general rule, if your modulator can handle a sine wave signal at 100% modulation, then the average power capability of your modulator is adequate for use with the Logarithmic Compressor. (After all, this ten db gain has to come from some place!) This means that, for a kilowatt rig, your modulator should be capable of continuous operation at 500 watts output at 1,000 cycles. For lower powers the same ratio holds.

In operation the compressor must be used with judgment—good judgment that is. Too much compression may make an otherwise acceptable signal almost intolerable. With a judicious amount of compression one can expect to add from 6 db (4 to 1 in power) to 10 db (10 to 1 in power) in the effective-

Department of EXTERNAL AFFAIRS ANTARCTIC DIVISION

SUPERVISING TECHNICIAN (RADIO-RADAR) GRADE I

Wanted, Supervising Technician (Radio-Radar) Grade I, for each of the Scientific Stations at Heard and Macquarie Islands. Salary range £612 to £666 plus special hardship allowance. Clothing, food and amenities provided. Period of stay approximately twelve months. Applicants should possess an appropriate University degree or technical diploma and should have a thorough knowledge of practical electronics. They will be required to service and maintain radio and radar equipment and radiosonde transmitters and receivers, and will also be required to act as senior wireless telegraphists. The appointee to Macquarie Island will be required to operate ionospheric equipment and take an interest in this branch of research. Applicants must be young and healthy and interested in outdoor activities such as walking, ski-ing, mountaineering, etc. Full details on application to the Officer-in-Charge, Antarctic Division, Albert Park Barracks, St. Kilda, S.C.3, Victoria.

W/T OPERATORS

Wanted, four W/T Operators to staff the radio stations at Heard and Macquarie Islands.

Salary range £552 to £576 plus special hardship allowance. Clothing, food and amenities provided. Period of stay approximately twelve months. Applicants should be fully qualified and must be young, healthy, and interested in outdoor activities such as walking, ski-ing, mountaineering, etc. Full details on application to the Officer-in-Charge, Antarctic Division, Albert Park Barracks, St. Kilda, S.C.3, Victoria.

ness of his signal **provided** conditions at the receiving point are such that understanding without the compressor is impaired by QRM or high background noise.

RESULTS WITH THE COMPRESSOR

In many months of test at W2KUJ the following information has been

obtained. Nearby stations, or stations not experiencing QRM, prefer that the compressor **not be used**. Stations receiving a weak signal or listening through severe QRM prefer that the compressor be used.

Reports from the latter stations range from eight to ten db jump in effective signal strength when the compressor is

switched in. Reports from nearby stations are that the signal is **louder**, but somewhat less readable with the compressor in use than without it.

In no case has a report been given that the signal was broader when the compressor was used, even when this question was asked of nearby stations.

Tests made at W2RYT's shack indicate that different microphones give somewhat different results when used with the compressor. For example, an Electro-Voice Model 805 dynamic mike and an Electro-Voice Model 915 crystal microphone seemed to have identical speech characteristics (although the dynamic mike had less output) when used without the compressor.

When used with the compressor, the dynamic mike was found to have a speech quality which was less harsh than that of the crystal mike. Further, it was found advisable to advance the compression control with the dynamic mike.

The foregoing is not intended as a recommendation for dynamic mikes, nor is it intended as an authoritative comparison between two Electro-Voice microphones. The comparison has been made to emphasize the importance of testing your compressor carefully with each microphone you may use with it.

In summary, one can expect to boost the effectiveness of his signal when it is needed most by use of the compressor (it frequently means the difference between making a contact or not) with some decrease in ease of reading the signal where the compressor is not needed.

Bear in mind that the compressor can be misused (to your disadvantage). Seek honestly to find the operating points which best exploit its use. In many cases it is best to **not** use the compressor. But in those cases where it is needed, the Logarithmic Compressor can really do a job for you.

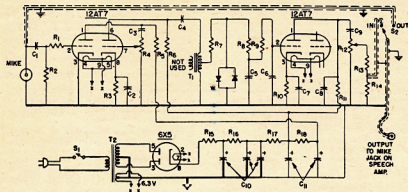


Fig. 3.—Circuit diagram of the Logarithmic Compressor.

CIRCUIT CONSTANTS

(All resistors and capacitors $\pm 20\%$ tolerance unless specified otherwise.)

- C1, C9—0.01 μ F. 400 volt paper or mica
- C2, C7—1.0 μ F. paper (see text)
- C3—1000 pF. mica.
- C4—0.05 μ F. 400 volt paper.
- C5—1000 pF. $\pm 10\%$ mica.
- C6—100 pF. $\pm 10\%$ mica.
- C8—0.005 μ F. $\pm 10\%$ mica.
- C10—16 μ F. 450-volt electrolytics (see text).
- C11—8 μ F. 450 volt electrolytics.
- R1, R14—10,000 ohm, $\frac{1}{2}$ watt.
- R2—10 megohm, $\frac{1}{2}$ watt.
- R3, R10—470 ohm, $\frac{1}{2}$ watt.
- R4—0.5 megohm potentiometer.
- R5—0.1 megohm, 1 watt.
- R6, R11—47,000 ohm, 1 watt.

- R7—47,000 ohm, $\frac{1}{2}$ watt.
- R8—56,000 ohm, $\pm 10\%$, $\frac{1}{2}$ watt.
- R9—0.56 megohm, $\pm 10\%$, $\frac{1}{2}$ watt.
- R12—0.1 megohm potentiometer.
- R13—0.47 megohm, $\frac{1}{2}$ watt.
- R15—470 ohm, 2 watts.
- R16—2,200 ohm, 2 watts.
- R17—1,000 ohm, 1 watt.
- R18—4700 ohm, 1 watt.
- S1—SPST toggle switch.
- S2—SPDT toggle switch.
- T1—Push-pull plates to voice coil audio transformer (see text).
- T2—Power transformer, 300-0-300 volts at 50 mls., 6.3 volts at 2 amp.
- W—Copper-oxide instrument rectifier (see text).

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Extracting the Watts

BY E. A. CHARLES,* VK5YQ

With the receiver problem out of the way (August "A.R."), thoughts turn to the transmitter and output efficiency. There are many ways of feeding various antennae and checking the S.W.R. to affect the matching of the transmission line to the antenna. This is a most necessary pre-requisite to efficiently loading the transmitter, as well as ensuring that the antenna system **only** is doing the radiating. However, the usual antenna tuner has been left in its pre-war form—a high L/C circuit designed for both series and parallel tuned feeders.

The usual antenna tuner was constructed on similar physical lines to the final p.a. tank. The Amateur was not concerned with loss of fidelity due to attenuation of high frequencies—side-band cutting. A high impedance tank was required for voltage-fed resonant lines for Zepp fed aerials and multi-band operation.

With the introduction of low impedance, un-tuned, non-resonant lines, the way out was to feed them by either tapping down the antenna tuner tank, or by inductively (link) coupling the transmission line. More often, an antenna tuner was not considered, if, by pushing a one or two turn link into the final tank, it "loaded." If it didn't, the coupling was increased until it did "load," or, the new aerial (or transmission line) was immediately condemned!

With the availability of 300 ohm twin lead, or the economy and free-from-weather-effect of home-constructed 300 ohm transmission line, its flexibility makes it a natural choice. It has low

losses, freedom from radiation, and freedom from unbalance due to proximity of grounded objects. So, you leave tuned feeders and full-wave Zepps to the countryman, the old-timers and experimenters like the VK5 "Umbrella-Man," putting your antenna system, whatever it may be, wherever most suitable, without any worries where the feed line must go.

Now, let us see what else is required. The object is to draw power from the p.a. and put all possible into the antenna (again remembering that **only** when the line is matched to the antenna feed-point impedance will all that power go into the antenna). In addition, we also desire:—

- (a) The most efficient transfer of power;
- (b) Absence of b.c.l. interference;
- (c) Absence of harmonic radiation (and t.v.i.);
- (d) If possible, multi-band operation.

With the transmitter itself properly tamed, (b) and (c) are taken care of by link coupling and a Faraday shield. It is a simple matter to install the popular 75 ohm co-ax line, using the outer braiding to form a Faraday shield. However, you must ensure that the antenna tuner is not within the field of the p.a. tank, or the effect of the Faraday shield is lost. It does not have to be co-ax line—you can shield a loop with braid (and insulate it) and earth it, running twin lead to the antenna tuner, unshielded when it is out of the p.a. pick-up zone. And it does not have to be exactly 75 ohm line, for a short line (compared to a quarter wavelength at the operating frequency) similarly terminated each end, reflects the same impedance both ends.

The reason for the figure 75 ohm, is because the antenna tuner is a parallel-tuned two turn coil (2" inside diameter, spaced wire diameter, heavy copper wire or tubing, silver plated if possible). The single turn link becomes the primary of a 1:2 turns/voltage step-up transformer; which is a 1:4 impedance step-up. Four times 75 equals 300—right on the beam for our 300 ohm line.

For plate-modulated phone, a p.a. tank with a loaded Q of 12 is desirable. An optimum practical coefficient of coupling of 0.09 makes the antenna tuner with a loaded Q of 10, so for parallel resonance, the capacity required equals: $C = \frac{Q}{2\pi f R}$. Remembering, again, only where our antenna is matched to the line (which now behaves as a purely resistive load at the operating frequency—300 ohms).

The capacities in circuit to resonate our antenna tuner with parallel tuning are:—

Ten Metre Band	100 pF. approx.
Twenty Metres	350 pF. approx.
Forty Metres	900 pF. approx.

Since it is a low-voltage tank, a receiving type condenser will be satisfactory—a 0.0005 usual b.c. type is OK. One that can be mounted with equal capacity between fixed and moving plates to earth is preferred. For tuning forty metres, a 0.0005 fixed condenser in parallel is required (or forty metres can be series-tuned by having a capacity of approximately 7 pF. in series with one leg of the 300 ohm line—the parallel capacity out of circuit).

The capacities are given as approximate, as they will depend, in actual working conditions, on the extra amount of inductance present in the circuit represented by the actual length of leads from the coil to the condenser. The parallel capacity will usually be a small percentage less. However, if the antenna loads way off the capacity shown, you haven't remembered! Or, if you have, you haven't done anything about matching the line to the antenna—you have got a poor S.W.R.! So get to work with a twin-lead!

Assuming you have a low S.W.R., you will find that you will have the same or a little better line current as when using the high L/C type antenna tuner. After all that was really like putting in a power transformer when all that was required was a 2.5v. to 6.3v. auto-transformer!

To refresh your memories, the line current to be expected is calculated from $P = I^2 R$, where R is your line Z when flat. So, if you are running forty odd watts to an 807, then an output of 30 watts is pretty good, giving 0.32 Amp. in the 300 ohm flat line to the antenna.

$$I = \sqrt{\frac{P}{R}}$$

For you 100 watt men, unmodulated line current of 0.5 Amp. is the order of the day. If you have any more on an accurate RF meter, it means either (a) you have standing waves, or (b) the R.I. is away on annual leave!

Put up a folded dipole for each band desired, you know that is well matched.

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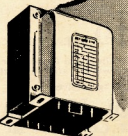
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Abstracts from Overseas Magazines

R.S.G.B. "BULLETIN," APRIL, 1950

P. 332: "The Design of Tank Circuits of Constant Q." B. W. Rogers, G6YR.—How to pick L/C ratios and match impedances of power amplifiers.
P. 336: "A 25 Mc. Communication Receiver from the R1132A." H. E. Smith, G6UH.

P. 338: "Avoiding Harmonic Generation." E. Wills, G6UC.—To avoid TVI, operates VFO on 25 Mc. cycles.

P. 338: "Determination of Meter Resistance." P. Huxley.

P. 339: "A Simple S Meter for the BC348." A. J. Bayliss, G8PD.

P. 340: "In the Workshop."—Files and filing. Saws and the snips. Cutting large holes. Drilling glass.

"SHORT WAVE MAGAZINE," APRIL, 1950

P. 92: "A Communication Receiver from the R1132A." P. Lamb.
P. 97: "Seventy Centimetres, Part III."—Super regen receiver using 955.

"SHORT WAVE MAGAZINE," APRIL, 1950

P. 98: "Two Metres with Three Valves." G. Elliot, G3FMO.—6SN7 harmonic c.o. and tripler, QV04/7 doubler, 832 final. Good sketches of physical layout.

P. 105: "Screen Control Modulator." H. J. Beach, G8RBO.—Economic screen modulation.

P. 108: "Voice Switching Circuit." E. A. Knight, G8NZ.—Circuits for voice operated break-in.

P. 112: "Modulation Level Indicator." H. Barnett, G2AIC.—Rectifier and meter across modulator output.

P. 113: "Dual Purpose Modulator." J. N. Walker, G5JU.—Part II.—100 watts audio from p.p. EL31s.

P. 121: "Matching Feeder Lines." F. Tillotson, G6XT.—Practical hints for adjusting feeders in particular for 300 ohm twin lead.

"RADIO AND ELECTRONICS," MAY, 1950

P. 4: "A Sub-Miniature Receiver for Radio Control."—Full details of 30 Mc. superregen receiver using three hearing aid valves. A battery drain of 75 Ma. at 1.3v. B battery drain 500 microamps. at 25.6v. Receiver, relay, and batteries weigh six ounces.

P. 9: "Actuator Mechanisms for Radio Control." P. 20: "A Portable Transmitter for Radio Control Work."—3.5 (or 1000) self excited oscillator. Three watts output at 50 Mc.

P. 24: "New Philips Range of Transmitting Valves."—Discussion of the amateur uses of the QQ06/40, QV04/7, QBS/800, TB2.5/300, QQ04/20, QQ04/10, and QQ04/15.

"SHORT WAVE MAGAZINE," MAY, 1950

P. 122: "A Portable Battery Receiver." J. N. Walker, G5JU.—Tuned RF stage, regenerative detector, audio. Plug-in coils.

P. 128: "Seventy Centimetres, Part IV."—Aerials; corner reflector. Sixteen element beam. Twenty-four element beam.

"RADIO AND TELEVISION NEWS," MAY, 1950

P. 30: "Simplified Ham TV Station, Part I." J. R. Popkin-Curman, W2LXP.—General discussion of the "flying spot" system used.

P. 39: "Something New in Transceivers." K. M. Korige, W8AHT.—Two metre transceiver with RF unit built into a telephone handset.

P. 51: "A Supermodulation Phone Transmitter." R. P. Turner, K6AI, and J. W. Graves, W3MYR.—8295 final using one half as the power amplifier and another as the positive modulator.

P. 63: "N.B.F.M. and F.S.K. Unit for Self Excited Oscillator." R. W. Jones, W6EDG.—Uses 6SL7 as Miller effect reactance tube.

"CQ," MAY, 1950

P. 11: "Design Considerations for Class C Power Amplifiers." K. L. Klippel, W6QO.—Simple formulae for Class C calculations.

P. 16: "Crystal Controlled Walkie-Talkie for Operation on the 144 Mc. Band." G. Treweke, W6DSR.—Dry battery operation. Six tube transmitter-modulator; three tube super regen receiver.

P. 18: "Eliminating TVI in Your Ten Metre Transmitter." S. Kupperman, W3QTV.

P. 22: "Meet the Generator." R. L. Rod, W2KVV.

P. 25: "A Midget Communications Receiver." R. C. Amundsen, W1HYF.—Two tube superhet covering 80 and 40 metres. 6BE6 mixer, 6J6 regenerative detector and audio.

P. 28: "Variable Audio Selectivity with the Surplus FL-8 Filter." J. P. Tyskewicz, W1HSU.

P. 29: "The Electrical Design of the 20 Metre Wide-Spread Rotary." W. L. Orr, W8RAM.—Good straight forward information on tuning them up.

"RADIO AND ELECTRONICS," JUNE, 1950

P. 37: "A Sub-Miniature Receiver for Radio Control." Part II.—Adjusting and testing.

"SHORT WAVE NEWS," JUNE, 1950

P. 154: "An O-V-O Receiver." G. H. M. Yule.

P. 157: "An Efficient Aerial for 28 Mc." H. E. Smith, G6UH.—Two wavelength wire, fed off centre with 100 ohm balanced feeder.

"QST," JUNE, 1950

P. 11: "Amateur Television—A Progress Report." E. P. Tilton, W1HDD.

P. 16: "An All-Band Mobile Antenna System." S. S. Perry, W8BR.—Quarter wave whip for 2, 6 and 10 metres. Loaded whip for 20, 40, 80 and 160 metres. Details of universal loading coil and adjustment procedure.

P. 19: "An Impedance Bridge for Less Than Ten Dollars." B. Dudley.—Simple bridge for measuring L, C and R.

P. 28: "Six Metre Coils for the HRO." L. G. Windon, W8GZ.—Conversion of a spare coil box for six metres.

P. 28: "Packaging the Basic Phone Exciter." R. W. Bradley, W1FIN.—Miniature construction of s.s.c.c. exciter.

P. 30: "A Four Tube Bandswitching Circuit for Mobile Rigs." W. L. Lio, W9LHP.—6N7 crystal oscillator, doubler, 807 final, 6N7 class B modulator.

P. 34: "A Noise Limiter for the HRO-M." R. W. H. Bloom, G6M6S.—6H6 limiter for pre-war and war-time HRO's.

P. 36: "A Low Cost Audio Filter." G. F. Montgomery, W3FQR.—Uses two filter chokes and a few condensers.

P. 41: "Tower and Rotator Techniques." L. H. Hippe, W6APQ. Part II.—A rotator, direction indicator and control unit.

P. 56: "Hints and Kinks": (i) Improved b.t.o. circuit for the 8X42, (ii) Antenna feed through panel, (iii) Protection for modulation transformers.

"HAM NEWS," MAY-JUNE, 1950

P. 1: "The Logarithmic Compressor."—Speech clipper using a copper oxide instrument resistor instead of diodes for clipping. This has a softer clipping action and an R-C filter can be used instead of the elaborate L-C filters necessary for diode clippers.

P. 7: (i) "VFO Hi-Lo Switch;" (ii) "Proper Care of Crystal Microphones."

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Tribute from Postmaster General

The following letter has been received from the Postmaster General personally commending the Amateurs on their valuable service to the people of Australia concerned in the recent floods in New South Wales.

The Postmaster General says: "In a recent broadcast over 2KM Kempsey in connection with the recent widespread floods in New South Wales, I made appreciative reference to the assistance given by the licencees of Amateur Wireless Stations."

He then continues, "Since then, I have received further information of the part played by members of the Institute, both in the Kempsey area and also in other parts of the State affected. Accordingly, I would now like to confirm in writing the sentiments expressed over 2KM, and to say how pleased I am with the readiness shown, once again, by Amateur Operators to perform a public service, in times of emergency, with the facilities for which they are licensed."

Federal Executive, on behalf of all the Amateurs, have great pleasure in conveying the contents of this letter to members and, on behalf of the Wireless Institute, of thanking those members who participated in this public service for stricken people in the flood areas. Keep up the good work of having reliable equipment available for times of national emergency. It is gratifying to receive such tribute from the Postmaster General and to know that the activities of Amateurs are held in such esteem by high authority. Let us pursue our hobby always on a plane that will maintain this happy relationship.

Moorabbin & District Radio Club's Honorary Membership Certificate

For the past few weeks the Moorabbin Radio Club has been instituting their publicity scheme in relation to Honorary Membership Certificates. The rules appear below and would suggest that you read them carefully. This is not a competition, but just a thought to foster goodwill among Hams.

The Moorabbin Club has a membership of over 50 including 26 active Hams, working from 80 to 2 metres. The meeting nights are as follows: Second Friday in the month is the practical night, and the third Friday is the general meeting. Club rooms are at the Town Hall, Nepean Highway, Moorabbin. The club's call sign is VK3AFC.

RULES OF AWARD

Object—To promote interest and friendship in VK3 contacts.

1. There are many active transmitting members of the club and to become eligible for the award, Australian mainland stations are to contact, by radio, 14 member stations, including the club's call sign VK3AFC.

2. Overseas stations, including ZL and Pacific Islands, to contact any 12 member stations by radio, phone or c.w. not necessarily including the club's call sign, VK3AFC.

3. The contacting station to ask if the VK3 being contacted is a member of the Moorabbin and District Radio Club, and then contacted member station may give explanatory details relating to the award.

4. On completion of the required number of contacts, the contacting station to give a list of christian names ONLY, together with dates of all contacts, to the final station.

5. After checking with logs of named stations and finding correct, a certificate of honorary membership will be awarded.

6. Honorary membership will allow all privileges of full membership less the power of vote.

7. This award is not available to club members.

8. Rules and conditions of this award may be amended where necessary (as outlined in Constitution No. 3, paragraph H) by a notice of motion, one month prior to being put to the vote, at a regular meeting of the club. After being duly passed by a majority of its members, the amendments will come into force.

THE EDYSTONE "750" COMMUNICATIONS RECEIVER

Selectivity.—The answer to the problem of obtaining high adjacent channel selectivity with freedom from image interference is to adopt the double superhet principle as has been done in the "750" receiver. The first I.F. is 1620 Kc. and the second 85 Kc. The signal is transmitted to the coupling between the coils can be varied mechanically to give a wide range of selectivity. At the extreme, the response is 60 db down at 5 Kc. of resonance, giving a selectivity about the highest obtainable degree of selectivity. This position is for c.w. reception—telemetry is still readable but the side bands are easily eliminated.

With the selectivity control at minimum, the response is 30 db down at 5 Kc. of resonance. This still represents a much higher than average selectivity and telephone stations only a few kilocycles apart can be separated easily, whilst maintaining moderately good audio quality. As a matter of interest, provided the loudspeaker is adequately tuned, is used, properly mounted, the quality of speech and music from broadcast stations will satisfy all but the most critical.

Sensitivity and Signal-to-Noise Ratio.—These two features are being dealt with as one, since it is pointless to quote only sensitivity without reference to the noise level. By adding valve after valve to a receiver, the absolute sensitivity can be increased but whether any worth-while improvement in the signal-to-noise ratio is obtained depends upon how much the noise level increases. Which leads to a point about specifying sensitivity. Most well designed communications receivers will render audible signals of strength 100 microvolts or more, possibly less, but the information is really useful only when a figure is quoted in comparison with noise. The noise level of the "750" receiver, as sensitivity is quoted as 5 microvolts for a 20 db signal-to-noise ratio—which is an extremely good figure. It simply means that a comparatively weak signal is audible against a very quiet background and this is one of the most noticeable features of the receiver. The associated features which immediately claim attention when one comes to use the "750".

It is normal for the sensitivity to vary to some degree over each range of operation. Sometimes the variation is great, but in the "750" the increased coupling between the stages is such that the variation is small. Maintenance of accurate tracking of the tuned circuits is assisted considerably in this respect.

Valves.—Of recent years much research has taken place in the development of improved valves and the modern miniature type has replaced the older valves. One of the short lead-out wires, resulting in low induction, another the lower anode/grid capacity, achieved by reduced electrode spacing, and a third factor which materially assist in improving the high frequency performance. In the "750", nine miniature valves are employed, plus a rectifier and a neon stabiliser, the two latter being of the octal type.

Circuit Line-Up.—By reason of careful design and the use of a high slope 6BA6 valve, the r.f. stage gives amplification to the high end of the frequency scale more than sufficient for all normal purposes and the addition of a second stage, is not justified.

The first stage is a frequency changer, in which position an ECH42 triode-hexode is employed. The anode of the triode portion is earthed and the oscillator voltage, developed by a separate valve (a 6AM3 triode), is grid driven. As the increased degree of frequency stability is thereby secured.

The output at 1620 Kc. from the i.f. transformer in the first stage is fed to the second frequency changer, another ECH42. Now some may question the absence of an intermediate amplifying stage, so a few words on this will not be out of place. The effect of the amplifying stage will be of benefit depends on the signal voltage required at the grid of the second frequency-changer to ensure a high signal-to-noise ratio. In the "750" the high gains given by the r.f. stage, the good conversion efficiency of the first frequency-changer, given by the second stage, and the voltage magnification given by the 1620 Kc. i.f. transformer result in the voltage at the grid of the second frequency-changer being adequate without further amplification. The second frequency-changer is a triode-hexode operated at a fixed frequency of 1535 Kc. and the resulting output at 85 Kc. is fed to a high "Q" tuned circuit and then to the detector and discriminator valve. The coupling between the windings in both transformers are continuously variable by a mechanical linkage controlled by a butterfly knob on the front panel.

There follows a double diode triode, the diodes being employed one for signal detection, the other for a.c. to d.c. conversion. The a.c. signal from the detector is passed on to the high slope 2X7 output valve. This is a new type of Ornam manufacture and is capable of giving in excess of 2.5 watts output at a low level of distortion.

One diode of a type 6AL5 valve is used as a series noise limiter, and as a result of the careful attention given to the design, this limiter is strikingly effective and is a great boon in situations where automobile ignition and similar interference is prevalent. The noise limiter has only a slight effect in the general audio reproduction.

The second diode is connected in series with the external "S" meter (when used). By its normal rectifier action, it prevents the flow of current in a reverse direction, and thus prevents the possibility of damage to the 200 microamps movement fitted to the "S" Meter.

The h.f.o. is a completely screened unit, utilising a 6BA6 valve and designed for high stability.

The VR150/30 stabiliser valve regulates the h.t. voltage to the anodes of the oscillator valves, to the screen of the first frequency-changer valve and also to the resistor network associated with the "S" Meter when the latter is used. Finally, there is a 524G rectifier valve.

Special Points about the "750."—Attention has already been drawn to the high selectivity and sensitivity possessed by the "750" receiver and there are a number of other features which deserve mention.

The heater circuits are balanced, the centre tap of the transformer winding being earthed. Heater connections are made where necessary and stray couplings through the heater wiring minimised. As a result, there is a complete absence of modulation hum right up to the highest frequency—signals with 70 note are heard as 70. The smoothing of the h.t. line is fully adequate and no hum is heard from this source.

The h.f.o. is of a specially screened unit, utilising a 6BA6 valve and designed for high stability. The VR150/30 stabiliser valve regulates the h.t. voltage to the anodes of the oscillator valves, to the screen of the first frequency-changer valve and also to the resistor network associated with the "S" Meter when the latter is used. Finally, there is a 524G rectifier valve.

The transformer fitted to the "750" is of generous size and is capable of providing more power than the "750" actually uses. The transformer therefore runs cool under any conditions. All components are finished for tropical use, the metal has been specially treated to resist corrosion and reliability of a high order is assured even when the receiver is operated in areas of high ambient temperature and humidity.

Tuning Mechanism.—The train of spring-loaded gears forming the tuning mechanism is a fine piece of small engineering. The control knob spindle is finished to a high standard of accuracy and is positive. The mean reduction ratio between control knob and gang condenser spindle is approximately 1:60, which makes possible very fine tuning. The scale is directly calibrated, a noticeable feature being the linear spacing of the markings. The dial is large, occupying the major portion of the front panel, and is self-illuminating by three small lamps fitted along the top.

Band-Spread.—Driven from the main gears is a rotating scale, the graduations on which (0-100 divisions) are read off in feet. It follows that ample band-width is available on each of the Amateur bands, the actual figures being given below. These are based on the allocations made at the Atlantic City Conference.

Tuning Vernier.—The tuning vernier is a fine piece of small engineering. The control knob spindle is finished to a high standard of accuracy and is positive. The mean reduction ratio between control knob and gang condenser spindle is approximately 1:60, which makes possible very fine tuning. The scale is directly calibrated, a noticeable feature being the linear spacing of the markings. The dial is large, occupying the major portion of the front panel, and is self-illuminating by three small lamps fitted along the top.

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Band Width	Tuning Vernier Coverage on Divisions in Feet	Vernier Scale Bandwidth	Kc.
29.7 to 28 Mc.	84.575"	200	1700
21.45 to 21 Mc.	7.5"	405	450
13.35 to 14 Mc.	6.45"	394	350
7.3 to 7 Mc.	6.15"	369	350
4 to 3.5 Mc.	6.15"	369	350

Absence of Crystal Filter.—The selectivity given by the "750" receiver with crystal at maximum is so great that it is practically impossible to make effective use of any greater degree. It is therefore not necessary to go to the expense of adding a crystal filter, with its attendant complications.

Operation on Telemetry.—With its high selectivity and low noise level the "750" receiver is the ideal for those whose interest lies in the reception of weak telemetry, either from Amateur Stations or from the B.B.C. Radioteletype Station. The intelligibility of such transmissions can be enhanced by careful adjustment of the selectivity control, which should be at minimum with strong stations and in cases where interference is not a factor. Unfortunately, under present day conditions, interference is a major problem and occurs only too often. Moving the selectivity control towards maximum will gradually cut it out and only in extreme cases will it be necessary to use the highest possible selectivity.

Automatic gain control in the "750" is most effective and the audio output from a given signal is held within close limits despite severe fading.

C.W. Operation.—Some experience is necessary with any receiver if maximum results are to be secured and the "750" is no exception to this rule. When the h.f.o. is switched on, a.c. is cut out. The coupling between the stages is varied until minimum selectivity, the i.f. transformer couplings are optimum and there is rather more i.f. gain available than in the case of a.c. operation. Unfortunately, when c.w. gain should be reduced manually.

In the majority of cases, it will be advantageous to use a high degree of selectivity and, with the transformer couplings below optimum, the i.f. gain control should be adjusted.

The h.f.o. pitch control gives a variation of 3 Kc. each side of zero beat. Because of the very steep slope of the selectivity curve, sensitivity is found that a signal peaks up on the side to which the h.f.o. pitch is set. When interference is present, it can often be reduced or removed by moving the h.f.o. pitch to the other side of zero beat and then slightly retuning. In effect, signal reception is possible.

Standby Switch.—The standby switch is fitted with a long "dolly" (operating lever) so that there is no mistaking it from the other switches. The method used for switching the standby switch is the bias on the i.f. amplifier valve, with the h.t. remaining on all stages. Two benefits result—the oscillator valves operate under constant conditions thereby maintaining good frequency stability and the receiver is available to monitor the outgoing signal from the associated transmitter.

Pick-Up Terminal.—Provision is made for the use of a standard type crystal or magnetic pick-up and these terminals serve another useful purpose—a signal from a separate monitor (c.w. or telemetry) can be inserted in the frequency scale of the telephone or loudspeaker, thereby rendering unnecessary an external switch.

"S" Meter.—Some operators like to have available an "S" Meter, which instrument can be very useful for comparative reports of telemetry transmissions and as a tuning indicator. Other operators, and particularly those whose main interest is c.w., do not require an "S" meter. The "750" therefore has an optional extra. It takes the form of a diecast housing finished to match the receiver and with an "S" meter scale which can be inserted in the socket at the rear of the receiver to bring the "S" meter into use.

Power Requirements.—The "750" receiver is designed for operation normally from a.c. mains, the cycle rate being 50 or 60 cycles per second. The voltages of 110, 200/220 and 230/25 are all covered. The consumption from the mains is approximately 70 watts. The range from 230 to 250 volts is covered and the size and runs cool over an extended period. Very generous smoothing is included, with a consequent absence of hum.

On occasions, it may be desired to operate the receiver from a battery supply and a special vibrator unit is available to meet this requirement. Listed under the "Accessories" section is a small cabinet which matches the receiver, and is fitted with plugs for connection to the receiver. The range from 230 to 250 volts is covered and the size and runs cool over an extended period. Very generous smoothing is included, with a consequent absence of hum.

Conclusion.—Although the foregoing description of the new Edystone Receiver is fairly lengthy, it is a fair description of the receiver, and does justice to the inherent "know-how" which has gone into the design of the receiver. But enough has been said to enable the reader to judge for himself the merits of the "750" for use by Amateur and Professional Communications and for Broadcast Reception on high and medium frequencies.

The above details have been supplied by the manufacturer, Edystone Radio Co., Ltd., 200, Victoria England—and described by J. N. Walker (G3JL). The Australian Factory Representatives are R. H. Cunningham Pty. Ltd., of 62 Stanhope St., Melbourne, Victoria.

DX NOTES BY VK4QL

For the week-end of 12th and 13th August, I don't think there were many VK Hams interested in DX, the attraction being the 1950 Remembrance Day Contest, and what a party. Each year this Contest is creating more and more interest, with more and more taking part.

Many of the keen DXers who have been hibernating while the DX has been so poor, crept out of their cocoons for this week-end and have apparently gone back to them as I have been unable to get any scores to include in these notes.

Conditions in Townsville were rather good for the Contest, 3.5 Mc. on the Saturday night and the lack of DX signs on 14 Mc. on the Sunday afternoon, enabled us to hear the weaker VK signs. 4TU and I tried to work 7 Mc. in the early hours of the morning, but more than half a mile is required to let two use that band at such close range. 4TU worked UA4FE on 7 Mc. in the middle of the Contest. Wouldn't it, with me needing Europe for 7 Mc. W.A.C. Two South Africans were also heard in the Contest on this band. The only scores I know of over the 400 mark are: 2PA 617, 2EO 593, 4QL 445, 4TU 425. Have not heard any of the VK6 or VK7 to see what happened over there.

As was anticipated, the DX on all bands has been very erratic and it looked as though these notes were going to have very little in the way of DX news. But, as I always say, you never know when the bands will "turn it on". This was borne out on the 14 Mc. band the week-end following the R.D. Contest, prior to a fade-out on the Sunday afternoon.

I find that just before a good fade-out is a real DX time, and this was the case on the Friday and Saturday. I managed six new countries out of the contacts made. I think the most interesting contact was PILS, who was on a Dutch weather ship, the QTH being 52°N and 20°E. QSL address is Box 400, Rotterdam.

The next week-end the same thing happened, but the noise level was well down, enabling the weaker DX to be heard. All over the world this year Hams have complained about the high noise level on the 14 Mc. band. Well, this week-end it was missing. The best catch this time was 9S4AX, whose QTH is Saarbruecken, Saar STR9. He advised there are four stations operating in the Saar. Strange to say no "dog pile" formed on him and he made a couple of fruitless CQs and called a couple of VKs with no result. Guess he was thought to be just another commercial in the band.

Some of the DX stations who more or less had a prefix to themselves are having competition, e.g. KV4AQ and KV4AU have been worked as well as KV4AA. A number of SP, OE, PJ, and HA calls have been heard. Some of the calls missing from the bands for some time are FN8AD, CRIOAG, FI8ZZ, VR5PL, and FU8AA. CR9AG has left Macao and from what he told me is going on a bit of a world tour.

Some of the rarer calls which have been heard or worked this month are: TG8AD, Box 299 Guatemala City; TA3AA, TA3FAS, UG6WD, 9S4AX QSL via D.A.R.C., PJ5FN, PJ5RE, HISS, KS4AC Swan Is., c/o Tampa Florida; VP1NW, ZP1AL, Box 226, Surinam; PK5AA, Radio Stn. Balikpapan; FQ8AC, Box 175 Bangui; LA4ZZ, VR1B, TF8TP, VP9OO, via VP9D. Except for about two of the above, the stations were heard between 2 p.m. and 11 p.m. E.S.T. QSLs received from TF3AR, VP7NM, VP7NU. One also received from FN8AD for our VK3 contact. Did anybody ever get a QSL from FI8ZZ? Haven't heard of any myself.

A certain VK5 has never heard of the "Gentlemen's Agreement." Was running a sked the other night on phone in c.w. band with PK4DA. DX was coming through fairly well at the time here.

Have you had a look at the Station List in the latest issue of the Short Wave Handbook put out by "Radio and Hobbies"? Did you notice in the overseas station list the number of stations shown operating in the 7 Mc. band? I think 2JU could do the Hams a service if he gets all the details of the broadcasts and submits them to Federal Executive for action to be taken up with the right people. What about it John?

● The thought for the month: "The Ham never uses the air for his own amusement in such a way as to lessen the pleasure of other fellow Hams."

DX C.C. LISTING

OPEN		
VK3RZ (4)	40	200
VK3RO (8)	39	169
VK3RX (3)	40	167
VK4HR (7)	40	167
VK6KW (15)	40	163
VK2DI (2)	40	160
VK3HG (3)	40	160
VK3JE (12)	39	154
VK4EL (10)	40	140
VK4DO (15)	40	140
Endorsement		
VK3AHA (9)	128	
VK4FJ (32)	120	
New Members		
VK3TI (37)	103	
VK3HO (28)	103	
VK3TG (39)	39	106
C.W.		
VK3BE (6)	40	177
VK3EO (2)	40	152
VK3CN (1)	40	141
VK3TH (15)	39	143
VK3VW (4)	40	140
VK4EL (9)	40	140
VK3KB (10)	39	138
VK2QL (5)	40	135
VK4HR (8)	40	131
VK4RF (11)	35	125
Endorsement		
VK4DO (20)	113	
New Members		
VK6SA (38)	136	
VK3XK (30)	103	
VK4FJ (39)	102	
PHONE		
VK3JD (1)	37	148
VK3EE (10)	37	143
VK6KW (4)	37	140
VK3BE (3)	37	137
VK6RU (2)	37	135
VK6DU (6)	37	135
VK3AS (11)	35	125
VK4HR (12)	35	122
VK4KS (9)	35	121
VK4JP (8)	35	114
New Member		
VK3AHA (15)	102	

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

OCTOBER, 1950

Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The Canberra charts refer to the following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

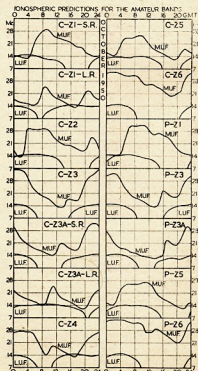
The Perth charts are similar to those based on Canberra.

QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Canberra-San Francisco circuit would be useful:—

1. Were good conditions experienced on 7 Mc. for the period 0700 to 1500 hours G.M.T.
2. Was the 14 Mc. band workable between 1200 and 1500 hours G.M.T.?
3. Was the 28 Mc. band workable for several hours around midnight G.M.T.?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the months.



FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

SYDNEY STATIONS ACTIVE ON 576 Mc.

The following list, sent in by VK2AQZ, gives details of the surprising increase in 576 Mc. activity in the Sydney area.

VK2ANP—Two RL18s, 5 watts, superregen. Rx, corner reflector ant., 12 miles greatest distant.
VK2AJA—Two RL18s, 5 watts, ASB7 Rx, Helix Ant., 18 miles.
VK2ABZ—Two RL18s, 5 watts, superregen. Rx, 16 element 17 ft. mast.
VK2AWZ—Two RL18s, 5 watts, corner reflector ant.
VK2AZO—Two RL18s, 5 watts, superregen. Rx, 1 x 4 ant.
VK2XZ—Two RL18s, 2.5 watts, superregen. Rx, Helix ant., 22 miles.
VK3YR—One RL18, 2.5 watts, co-ax mixer (12N1 staly) Rx, Helix ant.
VK2WJ—Two RL18s, 3 watts, superregen. separate ground Rx, 3 x 5 ant., 18 miles.
VK2ABH—Two RL18s, 5 watts, superregen. Rx, Helix ant.
VK2AJA—Two RL18s, 3 watts, superregen. Rx, dipole mesh reflector ant.
VK2XG—Two RL18s, 5 watts, superregen. Rx, Helix ant.
VK2ADW—One RL18, 2.5 watts, superregen. Rx, Helix ant.

2WJ and party are planning an expedition to Mt. Boyce (3,775 ft.) on 17th September with 576 and 144 Mc. equipment. 2ANP had an informative letter from VK3 described the 576 Mc. gear used and the results obtained down south. This has stirred 2AQZ to construct the above table showing the status of equipment and results of Sydney stations who are active on this band. 2HO is the furthest south (by about 1 mile) station of this band in the Sydney area. Oce. Cronin, with a double conversion superreg. has heard 2ADW, 2YR, 2FR, 2WJ, 2AJA, 2DF, 2ABH, 2AWZ, 2QW, 2XG, 2ANP, and 2XX. Col. Geordies, another non-transmitting member, has a 955 superregen. Rx on 576 Mc.

144 Mc. FIELD DAY AT STAWELL

From 3DS we have news of the 114 Mc. Field Day held at Stawell on 10th September. "There was a good number of portable gear and much work-around the district. Before leaving Ballarat I arranged with 3ZL (Eric) that we would call and he would listen for us on the hour and half-hour during the afternoon. We set up our station, operated from 12v. via an inverter and also a 12v. No. 11 generator, consisting of my rig, a converted I.L. and three element beam, 300 line fed, and a superhet receiver which belongs to 4YR. Ron Wilkinson, also of Ballarat, who accompanied us and which consisted of two stages of p.p. broadband G16, into a 6AQ5 mixer and 9AQ5 detector, at 11 Mc. into a commercial D/W Rx, and which really goes! At Ballarat he receives the Melbourne and Geelong boys, also Kevin, 3AKR, at Westmore, at good strength on a 4 over 4.

"The first hour was a washout, due to a 144 Scramble, but we stayed on and listened on a quiet band. First signal heard was 3BR at McElree Roadability 5 strength 3 on peaks with had QSB, beams directly on Melbourne, no reflections of the ranges. Then Eric from Ballarat at R5 89 plus. Both these sigs were heard consistently during the afternoon until 1635 when we heard 3BH very weakly and had QSB, but our batteries were nearly out from culling these stations and we had to close, no contacts with these stations having been made."

50 Mc. ACTIVITY

NEW SOUTH WALES

There have been no Interstate openings during the month but 2ADT, Newcastle, has been worked from Sydney. 2YV had his beams down and did a great job on the tower. Vaughan hasn't been too well and has been packed off to the mountains for a few weeks where he'll probably haunt the shack of 3ZL and company. 4YR members were, alas, the Sunday night broadcasts from 2WJ. 2XV made a rare appearance on the band and kept his fingers crossed during the QSO, watching the power supply for smoke. Sev. 10 busy re-conditioning a magnetic organ which he says is like wiring up a telephone exchange with rubber tubing.

2BG has cleaned out the shack which is apparently a big thing. 2IG has re-appeared on the band after an absence of two years during which he has built up a rig with a pair of 807s in the head. Cliff puts a strong signal into Sydney city albeit from a dipole ten feet high. 2ANP was to be ready for two and six cross-band contact with Newcastle by the summer time. 2HJ is having QRM trouble from car ignition on Pacific Highway and reckons cars should have transmitting licenses (a noise generator is not required in College Street either). 2ABH is almost ready to go with a pair of 807s. He has been finding all sorts of resonant circuits in the final stage with his grid dip oscil-

lator. Second op. Jack, at 2XX, is off on a visit to 6 land with a list of gear to bring back. Two "double axes" won't sound so west-country for a while. 2ZW makes rare appearances on the band with an 834 in the final. Why so elusive, Stan?

VICTORIA

ReX, 3VL at Omeo, is now transmitting on 50 Mc. each Sunday evening from 1930 to 2000 hours and is looking for contacts. Hero is a new contact for the v.h.f. gang, so watch the band for his signal to break through. 3SW and 3XA have both been presented with harmonic oscillators and both 3XV are doing well, likewise the harmonics. Congratulations are offered to Ken and Don.

SOUTH AUSTRALIA (by C. H. Castle, VK5KL)

Each month those notes will appear by the above writer to fulfill a long-felt want and request to the VK5 Council by the country members to whom

the main contact with the city affairs is via this magazine. My whole interest is in v.h.f. and I have a practical understanding of the country members' difficulties on the v.h.f., having spent three years in Darwin operating 50 Mc. without local support. In the lacking of personal parts and delays, owing to the shortness of time this month, I would like to be considered as a question box. So country members, send me your v.h.f. problems and where possible I will try to solve them. Write me your activities to 55 Rose Terrace Wayville, or if in town, ring U 2544.

With the weather improving and the DX season approaching, now is the time to check over your gear or finish off new equipment. December 1 can be considered as the start of the real DX, so get to it cheap. 2AD has re-erected his 50 Mc. four element beam, but the prop. motor is not attached as yet. 5GL still re-broadcasting W.I.A. session on Sundays on 144 Mc. Has nice collection of xtal converters for all bands. 5MK heard on 7 Mc. phone; why the migration? 5GB inactive re-covering from appendix operation. 5KL has a xtal converter under construction; have 0-4 Mc. xtal operating on fifth harmonic for the oscillator. Well chaps, I hope to have a good round up next month.

IN ADDITION TO STOCKS OF COMPONENTS ADVERTISED IN PREVIOUS ISSUES OF "AMATEUR RADIO" WE NOW HAVE SUPPLIES OF THE FOLLOWING LINES AVAILABLE:—

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FEDERAL, ISL, and DIVISIONAL NOTES



Federal President: W. R. GRONOW (VK3WG); Federal Secretary: G. M. HULL (VK3ZS), Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

President.—J. Corbin, VK1YC.
Secretary.—David H. Duff (VK2EO), Box 1784 G.P.O., Sydney.
Meeting Night—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.
Divisional Sub-Editor.—A. O. Pearce, VK2AIB, 131A Balmuir Rd., Leichhardt, N.S.W.
Zone Correspondents—Nth. Coast & Tablelands: J. H. Ballie, VK2AO, Raleigh, Newcastle; H. Whyte, VK2AHA, Vale St., Birmingham Gardens, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Confort Ave., Cumbok; Western: W. B. Sili, VK2AIB, Cumbok; Forbs; South Coast and Southern: R. H. Royner, VK2IDO, 42 Pettit St., Yass; Western Suburbs: A. C. Pearce, VK2AIB, 131A Balmuir Rd., Leichhardt, Eastern Suburbs: H. Kerr, VK2AX, No. 4 Plat, 144 Hewlett St., Bunter; North Sydney: L. D. Cuffe, VK2AM, 779 Military Rd., Mowman; St. George: J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton; South Sydney: V. H. Wilson, VK2VW, 21 Wilson St. and Marine Pde., Maroubra.

VICTORIA

President.—G. S. C. Semmes, VK3GS.
Secretary.—C. Dyer (VK4DY), 19 Collington Ave., Brighton (CA 6326).
Administrative Secretary.—Mrs. S. May, Law Court Chambers, 191 Queen St., Melbourne, C.I.
Meeting Night—First Wednesday of each month at the Radio School, Melbourne Technical College.
Zone Correspondents—Western: C. C. Waring, VK2YW, 12 Stone St., Stawell; South Western: K. O'Rourke, VK3AKR, Killigrew, Westmore; North Eastern: T. K. Tennant, 18 Harold St., Shepparton; Far North Western: M. Felle, 101 Lennon Ave., Mildura; Eastern: H. K. Koles, VK3AIB, Timbura; North Western: C. C. Case, VK3ACE, Cumming Ave., Birchip.

FEDERAL

REMEMBRANCE DAY CONTEST

Members have caused considerable delay and inconvenience by forwarding Contest Logs direct to the Federal Secretary instead of to their respective Divisional Councils. With all Federal Contests it is necessary that members forward their logs to the Divisional Council in order that their financial status and membership can be confirmed. The Divisional Councils are then responsible to see that logs are forwarded to the Federal Contest Committee for checking.

Members are therefore asked to remember to do this, and try to do this before the already overburdened Federal staff to have the final results available for publication within a reasonable time after the conclusion of a Contest.

Some members still omit to sign their log! Remember this mistake makes your log invalid because anyone can type or write a list of contest contacts and put your call sign at the top. Your signature, checked against your original application form signature, proves the authenticity of your log entry.

DX C.C. MANAGER

With the greatly increased membership of the W.I.A. it has been found necessary to expand the staff of Federal Executive to cope with the increase of secretarial work which this entails. The presence will increase the efficiency of Federal Executive to the benefit of all members.

In this regard VK3BZ, G. I. Morris ("Morris"), has gladly accepted the honorary position of DX C.C. Manager and will be speeding up the presentation of this certificate to claimants. "Morris" has also indicated his willingness to check W.A.S. 50 Mc. and Above for members interested in the v.h.f. bands.

To avoid the necessary delay involved in forwarding cards to G.P.O. Box 2611W, members are asked to forward their verification cards direct to "DX C.C. Manager G. I. Morris, Esq., 50 Eighth Street, Parkdale, Victoria."

In the meantime, members who have claimed DX C.C. and W.A.S. 50 Mc. Certificates and not yet had them issued, are asked to be patient for a week or two until the system becomes operative. Your Certificates have not been lost!

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI—Sundays, 1100 hours EST, 7196 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intra-state working frequency, 7175 Kc.

VK3WI—Sundays, 1130 hours EST, simultaneously on 3580 and 7196 Kc. and re-broadcast on 50 and 144 Mc. bands. Intra-state working frequency, 7185 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI—Sundays, 0900 hours E.S.T. simultaneously on 3750 Kc., 7196 Kc., 14342 Kc., 32.4 Mc. and 144.138 Mc. Frequency checks are given two nights weekly, and the times are announced during Sunday broadcasts. 7165 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to VK4WI.

VK5WI—Sundays, 1000 hours SAST, on 7196 Kc. Frequency checks are given by VK5WD by arrangement only on the 7 and 14 Mc. bands.

VK6WI—Sundays, 0930 hours WAST, on 7196 Kc. No frequency checks available.

VK7WI—Second and Fourth Sundays at 1000 hours E.S.T. on 7196 Kc. No frequency checks are available.

SILENT KEY

VK2ZS

It is with deep regret we announce the passing of Gerry Challenger, VK2ZS, on Monday, 4th September, 1950.

FEDERAL CONSTITUTION ALTERATIONS

F.E. on behalf of the Federal Council of the W.I.A., hereby gives notice that it is intended to alter the Federal Constitution of the W.I.A. (as amended 1947).

Section 41A, as follows:—Delete the word "thirty" and insert the word "fourteen" in lieu thereof.

Add 67A, Membership Transfer: "Where a member transfers from one Division to another, (1) The recipient Division shall receive him as a financial member for the remainder of the financial year provided he was fully financial before departing from the losing Division. (2) The Secretary of the losing Division shall advise the Secretary of the recipient Division of the intending transfer and of the member's financial status and grade."

Add 43A: "That in matters of finance involving all Divisions, a majority vote of at least 3 to 2 of the Federal Council be required for the passing of the motion."

DX C.C. CERTIFICATES

Because of repeated criticism of the existing DX C.C. Certificates, Divisional Councils in each State have been requested to forward to Federal Executive their Division's comments on the quality and

W.I.A. ACTIVITIES CALENDAR

Sept. 22-24: VK-ZL DX Contest (a.w.).
Sept. 29-Oct. 1: VK-ZL DX Contest (phone).
October 6-8: VK-ZL DX Contest (a.w.).
October 13-15: VK-ZL DX Contest (phone).

QUEENSLAND

President.—J. F. Pickles, VK4FB.
Secretary.—W. E. Stevens, VK4TB, Box 658J G.P.O., Brisbane.
Meeting Night—Third Friday in each month at the I.R.E. Rooms, Wickham St., Valley.
Divisional Sub-Editor.—J. H. Shannon, VK4-N, Minden, via Rosewood.

SOUTH AUSTRALIA

President.—E. A. Barbier, VK3MD.
Secretary.—G. M. Bowen, VK3XU, Box 1234K, G.P.O., Adelaide.
Meeting Night—Second Tuesday of each month at 7175 Kc., Adelaide.
Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

President.—R. W. S. Hugo, VK6KW.
Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.
Meeting Place.—Padbury House, Cur. St. George's Ter. and King St., Perth.
Meeting Night—Third Tuesday of each month.
Divisional Sub-Editor.—Alec A. Smith, VK6AS, 75 Weston St., Carlisle, Western Australia.

TASMANIA

President.—J. Brown, VK7BJ.
Secretary.—R. H. O'May, VK7OM, Box 371B, G.P.O., Hobart.
Meeting Night—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.
Divisional Sub-Editor.—S. Excell (VK7SJ), 77 Mole Street, Hobart, Tasmania.
Northern Zone Correspondent.—R. H. Kilby, VK7RK, 5 Galvin Street, Launceston.

standard of this Certificate preparatory to requesting specimen designs for a new Certificate.

Members who are competent with the drawing board are asked to take an interest when this matter is brought up in their Division and submit designs. Don't leave it to the other member!

ADDITIONS, ALTERATIONS, AND DELETIONS TO AMATEUR CALL SIGNS—AUGUST, 1950

Additions—

VK3BG—G. C. Page, 59 Simpson St., Tumut.
2ACN—R. S. Nancarrow, 1A Parklands Ave., Lane Cove.
2AHC—J. H. Corcoran, 23 Glasgow Ave., Bondi.
2AIF—J. C. Fairweather, 555 Fisher St., Broken Hill.
2APB—H. B. Branford, 1 Centennial Ave., Lane Cove.
2APF—H. J. Freeman, 90 Rosemont St., Punchbowl.
2ATR—E. F. Reynolds, c/o S.S. "Mungana".
2AWM—D. J. Medley, 16 Kennett St., Bondi.
VK3AIG—D. G. Gilder, 38 Clarendon St., East Melbourne.
VK3AOS—A. K. Scouller, 878 Mt. Alexander Road, Essendon.
3AYM—V. R. McKenna, Christian Bros. College, Queensberry St., North Melbourne.
3AZW—T. Leifur, Owen Street, Boroondra.
VK4EX—E. D. Neale, 38 Felix St., Woolloomooloo, Brisbane.
4FQJ—J. F. Murdoch, 29 Godsal St., Toowoomba.
VK5EA—R. L. Archibald, 3 Penong St., Hyde Park.
5EC—J. E. Cameron, Flying Doctor Base, Alice Springs, N.T.

Alterations—

VK2WD—176 Albion Street, Annandale.
2JH—108 Quarry Road, North Ryde.
2ML—Lot 46, Smith Avenue, North Manly.
2NB—17 Bray Avenue, Earlwood.
2OG—"Bushlands", 15 Linden Avenue, Pymble.
2QF—45 Sunnyside Crescent, Cusack.
2YI—61 Leura Road, Ashura.
2AID—"Marell", Fernleigh Road, Wagga.
2AUC—105 Quarry Road, North Ryde.
2AKT—7 Chelmsford Avenue, Epping.
2APD—63 Prince Street, Moaman.
2ARD—45 O'Donnell Street, North Bondi.
2AST—37 Gordon Rd., Long Jetty, via Gosford.
2AWJ—25 Hendy Avenue, Collaroy.

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relax, Ted Scott, tendered his resignation and the Assistant Secretary, SAIX, was appointed to carry on. The meeting placed on record the good work Ted has done and wished him well in his new job.

The main item of business was the formation of the rules of the "Honorary Membership Certificate" for Australian and Overseas Hams. A full set of rules appear elsewhere in this issue. On fulfilment of the rules, an illuminated certificate of Honorary Membership will be issued to the successful applicants. The club asks you to read the rules very carefully, further details can be had from members when in QSO.

Len ("Lenfo") Jackson chose for his lecture "Sound on Film Recording." After the lecture, the President expressed on behalf of the members his appreciation of Len's fine effort. JEM reported on the practical night recently held and stated that the xmitter is well under way. The club authorised Ed to purchase a suitable receiver for club use. Donations still come in in the form of gear for which the club is very grateful. John Dawes reported on his visit to the V.R.L. Radio Club's annual meeting and conveyed that club's greetings to this club. There being no further business, the meeting closed at 2330 hours. The club meetings are held on the second and third Friday evenings of each month at the Town Hall, Nepean Highway, Moorabbin. The next meeting (20th October) will be a lecture on "High Frequency Transmissions," given by a "high up" in the R.A.A.F. We would like to see as many of the boys as possible at any of our meetings.

EASTERN ZONE

The main subject this month is the inaugural meeting of the Sale Sub-Branch of the W.I.A., which took place on 15th August at the residence of 31Y, Rex Schmidt. Those present were 8SS, 3QO, 31O, 2VG, 8ABF, 3APG, 3QZ, 8AHH and a flying brass-pouder, Bud Poandsett, of the R.A.A.F. Bud has his ticket, but as yet no call sign. Our Zone Secretary, 3QZ, opened the show by reading a long screed, full of "where-as" and "heretofore," pertaining to the formation of sub-branches, etc., and it was decided to carry on with the sub-branch, in spite of all the long words in the screed. The group will be known, locally at least, as the Sale Radio Club, with the object of encouraging and assisting the radio minded lads of the district, to extend their knowledge of the noble art of Ham

Radio and eventually gain their tickets. We intend to hold regular meetings in our various towns and this should give the beginners considerable aid through getting to know each other and being able to ask questions to which the handbooks don't always seem to have the answers.

8ABF was elected President and 8SS Vice-President; Howard Vinning, 8VG, is Secretary and Treasurer. That witty warrior, 3QZ, when enthusiasm reached its height, pulled out a bundle of W.I.A. enrolment forms and said, "Sign here, please." The four back sliders of the zone paid up at once! On conclusion of the meeting, the gang dined with the very nice supper served by the much-better halves of 31Y and 3GO. We then inspected Ron's rack and panel gear which he is building up and after much ear bashing, we proceeded home.

The following evening 3QZ attended a meeting of would-be Hams in Bairnsdale and it looks as though 80 metres will have some more QRM in the near future. Graham collected five more applications for the W.I.A. there, with one from Tromag, gives the zone ten new members for the month! Beat that, if you can!

Apart from the foregoing, personal items this month are scarce. 8SS is the proud possessor of a nice new Chev.—see it at our Convention! Keith also had trouble recently with twisted feeders—have you all woken up yet chaps? 3WE has been very ill, but in picking up now, I am pleased to say. 3US/3VL have the 6 metre beam 45 feet up now—these v.h.f. cranks! Owen has been inactive for about three months so someone else has been using her call sign. Any decent car? Owen? The hook-up proceeded each Sunday as usual, 3PR, 31Y, 3TH and 3AEP being well to the fore. A new power tranny has turned up for 3AHH so that after three months of phone advice, he will have to get the 80's again. Let 8AHH know what's doing chaps, especially our Bairnsdale associates, as if no can hear, no can write notes.

SOUTH WESTERN ZONE

On the 17th August 8AGD and your scribe, 3AKR, departed from the temperate south west, for the snowlands as they were travelling in two separate cars, it was decided to install 144 Mc. mobile equipment in each car, consisting of superregen-modulated oscillators. Lots of funny effects were discovered in the timbered and hilly country while operating mobile. On the Sunday at Mt. Buffalo, we had a

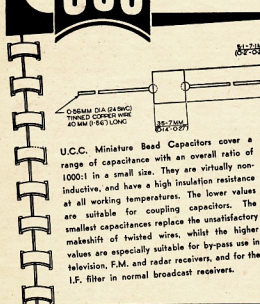
welcome visit from 3KR and 3AT who brought their XYLs and harmonies up for the day. At the end of the week, bruised and tired, we started for home, calling at Ken's (3KR) shack on the way. 3WT had some choice DX in the form of a visit from HB1EL from Switzerland. I wish Peter had been able to visit us out here, he would have been able to tell us all about the snow over there. Bill also has a 50 watt modulator for his TA12D now and in no time at all will be really pushing out a signal. 3YE decided the other day to blow the cobwebs out of his 20 metre coils and in so doing worked himself some fine DX. 3KX's new 20 metre beam is working out I.B. and the country list is really climbing. 3HG will soon be shifting into the new home and shack; you will have to shift the rhombic and vee beams, Neil!

3MO is still working the DX on 40 and only wants Europe for W.A.C. on that band. 3ZU has a new well controlled carrier rig going, says input swings from 20-70 watts on speech. 3BJ has been heard on 80 lately and putting out a fair sort of a signal too; believe Bert has been having trouble with the eyes again, certainly hope it is better by the time this goes to print.

By the way, I would like to remind some members that there is a hook-up on the first Sunday of EVERY month at 10 a.m. I would also like to ask those chaps who have not been on these hook-ups to make an effort to do so in the future. After all, how can one or two chaps discuss matters relating to the whole zone.

The Geelong gang have not been so active over the past month, guess the cold weather has a lot to do with it, also some illness. 3AOL has built up a new v.l.o., also has a new mike which has improved his quality. 3AJT still working some good DX on 20 metres; has a new Rx, a "750". 3ABV will soon have his new beam up for 80 metres and has been busy wiring up the motors for it. 3BW heard on 80 recently; has made a xtal locked converter for 144 Mc. 3AKE still having regular contacts on 144 Mc., is building a new converter and has put a lot of work into it. 3ALG has a new v.l.o. Have heard very little of 3WT, 3IC and 3CM. 3AGN is now using controlled carrier, in spite of his very low antenna, he was heard working; VK4 recently. 3AIC has built up a portable transceiver for 144. 3ABK was home for a short period for the first time for a time. 3BU had a couple of contacts on 144 using his 522.

U.C.C. MINIATURE BEAD CERAMIC CAPACITORS (Type SPG.1)



U.C.C. Miniature Bead Capacitors cover a range of capacitance with an overall ratio of 1000:1 in a small size. They are virtually non-inductive, and have a high insulation resistance at all working temperatures. The lower values are suitable for coupling capacitors. The smallest capacitances replace the unsatisfactory makeshift of twisted wires, whilst the higher values are especially suitable for by-pass use in television, F.M. and radar receivers, and for the I.F. filter in normal broadcast receivers.

CAPACITANCES	0.47 pF, 0.68 pF, 1 pF, 1.5 pF, 2.2 pF, 3.3 pF, 4.7 pF, 6.8 pF, 10 pF, 15 pF, 22 pF, 33 pF, 47 pF, 68 pF, 100 pF, 150 pF, 220 pF, 330 pF, 470 pF.
TOLERANCE OF CAPACITANCE	Guaranteed not less than -20% of stated values at 20° C. (on values 3.3pF and above). Nom. capacitance below 2.2 pF. Test conditions 10V. RMS. at 150 Kc/s.
INSUL. RESISTANCE	Greater than 5,000 Meg. at 1,500V. D.C.
WORKING VOLTAGE	500 Volts D.C. or 250V. RMS. A.C. 20 CPS-60 CPS.
TEST VOLTAGE	1,500 Volts D.C.
MARKING	Capacitance red ink on white ground.
NOTE	Dimensions shown are for capacitors with Finish "C." Finish "A" increased overall dimensions by approx. 2 M.M., and Finish "E" by approx. 1 M.M.

★ UNITED CAPACITOR CO. PTY. LTD. ★

53 Carrington Road, Marrickville, New South Wales
Postal: Box 49, Marrickville. Phone: LL 3211

Associated with Technic Limited of Australia and Telegraph Condenser Co. Ltd., British Insulated Callender's Cables Ltd. and United Insulator Co. Ltd. of England.

**ELECTRONIC
A & R
EQUIPMENT**

HAMS!

**ELECTRONIC
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EQUIPMENT**

In response to numerous requests for a more universal high tension transformer, we have re-designed our type PT1371-8. It is our belief that the new range of taps will meet the requirements of both "Hams" and "Sound Men" alike. The new PT1371-8 now features the following:—

Primary: 200, 220, 230, 240 volts; **Secondary:** 500, 600, 750, 850, 1,000 volts per side of C.T. at 300 Ma.

The price of this conservatively rated item is unchanged by the modification, and is obtainable at the old price of £6/8/1 including tax.

MAINS FLUCTUATION

A further A. & R. type is a must with many Hams—namely our AT1202-22 mains adjusting transformer. This item is tapped from 180 to 250v. in 10v. steps, and will continually handle a 500 V.A. load—ample for the total drain for any rig. The price of the AT1202-22 is £3/17/4 including tax. Also available are mains adjusting transformers rated at 100, 250, and 1,000 V.A.

All A. & R. Products are obtainable from:—

Wm. Willis & Co., 428 Bourke St., Melbourne (MU 2426); **J. H. Magrath Pty. Ltd.,** 208 Lt. Lonsdale St., Melb. (C 3688)

A. & R. Electronic Equipment Co. Pty. Ltd.

378 ST. KILDA ROAD, MELBOURNE, S.C.1

Phones: MX 1159, MX 1150

Setting a New Standard in Communication Receivers—

The "Commander" Double Superhet.

Free Data Sheets on Request

Interstate Representatives: West. Aust.—Messrs. Atkins (W.A.) Ltd., 894 Hay St., Perth. Queensland—Messrs. A. E. Harrold, 123-5 Charlotte St., Brisbane. In other States direct your inquiries to firms handling Bright Star Crystals.



Valves, new, boxed, RCA 834s, £1/8/- each.

6C4s, 12/- each.

Limited number of the following Taylor Tubes: TZ20s, £2/10/- each; TB35s, £6/10/- each.

Type 11 Transceivers in fair condition, with power supplies, £9 each.

CRYSTALS, as illustrated, 40 or 80 mx., AT or BT cut. Accuracy 0.02% of your specified frequency, £2/12/6 each.

20 metre Zero Drift, £5 each.

Large, unmounted, 40 or 80 metre, £2 each.

Special and Commercial Crystals—Prices on application. Crystals re-ground, £1 each.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

A.W.A. Split Stator Transmitting Condensers, high voltage, £2/15/- each.

Screw-type Neutralising Condensers (National type), suits all triode tubes, Polystyrene insulation, 19/6 ea.

Prompt delivery on all Country and Interstate Orders.

Satisfaction Guaranteed.

BRIGHT STAR RADIO

1839 LOWER MALVERN ROAD, GLEN IRIS, VIC. Phone: UL 5510.

Listening to TBI on one recent Sunday night and was envious of the f.b. signal which was received at this time. The signal was not very strong, but the receiver, but I will have to admit the transmission was faultless. Congratulations, Brian. Believe "Acker" Anderson is a lot of a shock on microphone as he was sent a mike to check by TSK. Was puzzled at the lack of output so upon opening the case, believe it or not, found our mate had forgotten to connect the lead from the base of the antenna.

For those not so financial and desirous of a radio receiver suggest you walk past a certain Ham's store in Liverpool Street, any time after six p.m. Anything from a mantle receiver to a combination radiogram can be obtained, suggest you leave your ARRS out one night Max and see what happens.

A new call to most is TSK which is operated by an Army Signal Corps Officer at "York House". Noticed a DL1 amongst other foreign calls listed in the log. Several well-known Hams are in the Unit and so other "radio hungry clubs" has been formed.

A meeting was convened by TAB with the purpose of forming a North Western Zone. This should be a great benefit in fostering Amateur activities in this area as one of their aims is to conduct A.O.C.P. classes which should increase W.I.A. membership. Most of the Ham's in this area find it most difficult to attend Institute meetings at Launceston, owing to the long journey necessary.

It was whispered Johnie Grace has now descended from the remoteness of 144 Mc. to 40 metres and now contemplates building a receiver for this particular band. TSK now works exclusively in the form of a G on 40 and was received at 89 pps. Was a surprise until I found the "G" was marine modulation and not a C.T. or A.T.

As these notes have been prepared prior to our September meeting, it is intended the Lecture will be given by Mr. Turnbull, continuing his previous lecture. This should prove interesting as a panorama scope will be exhibited and how the c.r.o. can be used in the checking of receivers. Discussion regarding future emergency network practice will be another item. Most of the Ham's in this area are free armchair and enjoy the cosy comfort to be had at these meetings?

NORTHERN ZONE

Seems to me that last month I tried to run 30 days ahead of myself and reported the August meeting before it happened. I should have said the meeting was held on the 10th of August. Our meetings seem to be drawing bigger and better crowds as they go on and this month was no exception. Most of the Ham's in this area are free armchair and enjoy the cosy comfort to be had at these meetings?

Well, the 1956 R.D. Contest is now but a memory and what a memory! The pounding those poor hands took part in just nobody's business. The contacts just rolled in one after the other, guess most stations turned up to play their part for their State and pay tribute to the memory of the contest perpetuator. Judging by the activity some really bumper scores will be turned in and the final result bound to be close.

Activity apart from the R.D. Contest has been somewhat desultory during the month. TBQ has been firing up on 6 getting ready no doubt for the season. The summer months may be over but TBQ seems to have been blowing transistors; after the second one went, Col. working on the usual sequence of three, took one from the junk box and three more for insurance. But once again, the contest popped which just goes to show what a cruel thing fate can do. A new converter for 6 and 10 is starting to emerge from the work bench and I, for one, am eagerly following results with an eye to a future similar piece.

Was walking out Lyttleton Street was some days ago and idly speculating as to which QTH belonged to 77F when lo and behold an amazing collection of arps met my eye; beams of all sorts and sizes, feathers and all the trimmings. I stood and gazed and wondered if I were a signal which of the maze I would choose to get myself inside and

reach the ears of the operator. However, judging by the results, they do sort themselves out very well. The only one we have lost is the one the person of 7X1L Noel has been transferred to VK3 and we will hope he heard from there. While not very active at the moment, he has lost the contact point of the place that he did not attend and he will be missed by us all. Good luck in the new State, Noel, and it's been nice meeting you.

7XV, 7XW, 7XZ were in on the R.D. Contest for a few contacts and out at Longford TDS kicked off very well, but struck receiver trouble in the middle—long luck Bill. The expected card from VK1ADP, mentioned as being a hopeful in the batch received by the QSL Manager from VK3, did not materialize, as we are still on the waiting list; a compensation for TSL and myself did arrive however this month in the shape of FNSAD, long since written off as one of the "lost" ones. I should have been a little more patient, although still wouldn't go into raptures about it. The ionospheric prediction charts for September look interesting so maybe the month is out; things may be well on the up grade.

So, once more here's the contest and, as a reminder, the date in October is the 13th—for jittery members a supply of rabbits' feet and lucky charms will be available at the door at a small charge, proceeds to go to the society for destitute Hams—as if there are any other sort. . . .

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writers and do not necessarily coincide with those of the publishers.

CONTEST RESULTS

Well, oriented, Lancelotti A.V., Beaumont, S.A. Editor "A.R." Dear Sir,

I have read, with interest, the rules for the 1956 VK-ZL Contest, and could not help smiling at the heavy emphasis on receiving 15 minutes in the morning, 1956. Isn't there a rule 15 missing requesting the Contest Committee to return results by a definite date?

Well oriented, the 1948 Contest—handled in ZL—was not exactly encouraging in that respect; results being published in a rather sketchy manner, and the VK-ZL district winning 15 minutes.

In 1949 I really had hopes that VK3 would be quicker on the job, but alas, 15 months have gone and no sign of Contest results.

Most of the fun of the Contest is lost with that lag in publishing the result, and an effort should be made to get the results in say three to six months. Of course it is true that, even the A.R.R.L. is struggling in spite of all their staff and facilities, but nevertheless the high scores are given within three months.

Count not the best brains in handloom be asked to devise a new basis for Contests which simplifies and reduces checking work?

I remember an Editorial some time ago asking for views on Contests in general and while I am on the subject, I can mention that I believe that there is still a lot of interest in Contests, particularly in the big ones which have been established for some time. I think it will continue to be the case that the average man can manage to participate in more than two or three each year and send the logs plus analysis about a year.

I cannot conclude this letter without expressing my appreciation for the promptness with which the "A.R." arrives every month. In fact I am approaching the point where I naturally turn to look for it. If I could only find those test results!

—F. G. HAAS, VK3FPH.

[No one understands the problem of having Contest results available within a reasonable period after a Contest than does Federal Executive, but the table is always, and will continue to be, that of "no interested members to help" until such time as a Contest Committee is formed to keep Contest matters straight. The Federal Executive will give the criticism fired at them and despite a united attempt by the Victorian Council to obtain four—only four—members to form a Contest Committee in conformity with General Business Item No. 6 of the 1950 20th Annual Convention. Let's hear from you.—Federal Executive.]

BRILLIANT MAGAZINE

"Grand View," Cliff Drive, Katoomba. Editor "A.R." Dear Sir,

In response to the paragraph which appeared in the June issue of "Amateur Radio" concerning the publication in the United States of a new

magazine in Braille, I wrote to the address given and have received in reply a letter, a copy of which appended below for your information.

I have also forwarded a copy to the New South Wales Division of the Institute, and I would suggest that all concerned should give publicity to this matter as is considered necessary throughout all Divisions.

The first issue of the magazine referred to in the above has not yet come to hand, but when it does so, I shall inform you as to the general nature of its contents.

WILLIAM J. ZECH, VK3ACP.

Dear Bill,

Received your letter inquiring about the new Braille Magazine for Blind Amateurs today and very pleased to inform you about it.

It is called the "Braille Technical Press," and the first issue was released in March of this year. It is a Radio and Electronic guide published monthly for the blind. Edited by Robert W. Gunderson, W210U, executive offices, 986 Waring Avenue, New York City, 67, N.Y. U.S.A. The cost of the publication is six dollars a year, and it will be sent to blind Hams, short wave listeners, sound engineers and servicemen anywhere in the world.

It is a very interesting and useful publication. I am sure that all blind persons interested in radio, whether they can afford the subscription price or not. Of course it is a tremendous project and a costly one, but it is already off to a good start. Your name has been put on the mailing list, and you soon will begin to receive copies. After receiving your first copy please write to W3410 stating your desire to continue to receive the publication, and that you read Braille. This is important as those not answering will be dropped.

Will you kindly inform the official organ of the W.I.A. Magazine for Blind Amateurs, and let them know that we are anxious to hear from all blind Amateurs, short wave listeners and servicemen who read Braille.

After receiving and reading the "B.T.P." we will welcome any suggestions or criticisms you may wish to offer. I am serving on the board of directors, and with other blind Amateurs and Engineers, we will set the policy of the magazine.

At the present time I operate only on 10 metres, both phone and c.w., using a Hallicrafter's HTV transmitter running at 100 watts and a three element beam, also using a national NC200 receiver with a preselector and a Millen VLF. I am planning to erect a liverpool for 20 this summer. I have part time employment at a metallurgy plant and have a guide dog to take me back and forth from work.

It will be greatly appreciated if you will send me information regarding the magazine. I am sure people who may be interested in radio. You may write either in Braille or print. Here's hoping you will receive the magazine soon and enjoy it, and that we may meet on the air some day, very 73.—EVERETT A. ERICKSON, WINLM, No. 5 Oakland Heights, Bethel, Connecticut, U.S.A.

HAMADS

9d. per line, minimum 2/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by the Editor one month, and remittance must accompany advertisement. Calculation of cost is based on an average of 10 words a line.

Dealers' Advertisements accepted on this column.

FOR SALE—Hallicrafter SX18 Communication Receiver, fitted with noise silencer and voltage regulator. Complete with S meter and speaker. £40 or offer. O. L. Nestrom, 8 Burgan Street, Broadwood, South Australia.

SELL—Marconi Xmitter TNS2 50w. brand new with valves and 3.5 Mc. xtal. £20. Also TA12D Xmitter, excellent condition. Write R. Black, Central School, Liverpool, N.S.W.

WANTED—AMR200 Components and Dust Covers for Receiver Coil Box and Power Supply. T. D. Hogan, 127 Oakleigh Road, Carnegie, S.E.9, Victoria (Phone: UMO 1732).

WANTED—Good VCR140 C.R.T. Tubes, G. Millard, 18 Ward Street, South Melbourne, Vic.

CLASSIFIED ADS.

Advertisements will be accepted under this heading for the trade, and/or advertisers who wish to be regarded in trading as a livelihood. Rate: 15/- per inch.

WANTED TO BUY—BENDIX FREQUENCY METERS BC221 or LM7, etc., in good condition, any quantities. R. H. Cunningham Pty. Ltd., 62 Stanhope St., Malvern, Vic. (Phone UY 6274).

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EDDYSTONE "750"



The "750" is a magnificent model—an entirely new, ultra modern Amateur Bands Receiver with a host of outstanding features. It is the successor to the famous "640"—thousands of which are in use the world over, including the U.S.A.

Featuring:—

- Coverage 480 Kc/s. to 30.5 Mc/s.
- 200:1 ratio dial reduction.
- Modern miniature valves.
- Three watts of audio.
- Double detection super-heterodyne (1,600 and 85 Kc/s.).
- Stabilised H.T. supply.
- Provision for external S meter.
- Variable selectivity I.F.'s.
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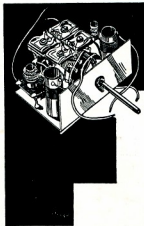
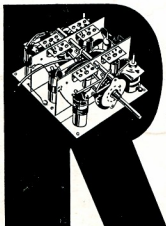
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